भारतीय मानक **IS 18531 : 2023**

Indian Standard

वस्त्रादि — 50 किग्रा खाद्यान्न पैक करने के लिये पटसन एवं पोलीप्रोपलीन के यूनियन से बने बोरे — विशिष्टि

Textiles — Jute and Polypropylene Union Bags for Packing 50 kg Food Grains — Specification

ICS 55.080, 59.060;67.060

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December 2023 **Price Group 7**

Jute and Jute Products Sectional Committee, TXD 03

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Jute and Jute Products Sectional Committee, had been approved by the Textiles Division Council.

Over the years jute bags have been extensively used for the storage and packaging of food grains such as wheat and rice. Government of India is one of the largest procurement agencies, accounting for almost 30 percent to 40 percent of the total foodgrains produce in the country. The produce is mostly packed in 50 kg capacity jute bags.

As per *Jute Packaging Materials, Act* (JPMA) 1987, it is mandatory to pack the foodgrains in jute bags. However, over the last many years shortage of jute bags has been faced by the procurement agencies**.** Jute is in limited supply, far less than the requirement, hence a vital need for an alternative packaging material has been felt**.** Jute and polypropylene union bags are manufactured from jute yarns in accordance with JPMA (that is containing more than 75 percent of jute by weight) and other environmentally sustainable manmade materials. With the same quantity of jute, almost 50 percent more bags can be produced. The source of raw jute and the yarn used for the manufacture of jute and polypropylene union bag shall be of Indian origin as per *the Jute Packaging Material, Act* (JPMA) 1987.

The physical characteristics like colour, texture, and the touch/feel of the jute and polypropylene union bags are comparable with the conventional jute bags. As compared to conventional jute bags, they are far stronger almost ruling out the possibility of any damage to the bags and thus, to the contents, even with rough handling during multiple loading, unloading and transportation etc. Being lightweight, these bags result into ease and cost saving while transporting empty bags to the point of use.

It has been clarified by Ministry of Environment, Forest and Climate Change, Government of India that jute and polypropylene union bags will be covered under the definition of plastic packaging as given in *Plastic Waste Management Rules*, 2016 as amended from time to time. Accordingly, the guidelines for extended producer responsibility (EPR) on plastic packaging are applicable for jute and polypropylene union bag and will fall under the category III multilayered plastic packaging for the purpose of plastic waste management and disposal protocol.

As per the guidelines for extended producer responsibility (EPR), the obligated entities that is producers, importers and brand owners manufacturing jute and polypropylene union bags are to register for Extended Producer Responsibility, on the centralized Extended Producer Responsibility portal for plastic packaging and have to fulfil the targets for Extended Producer Responsibility, recycling and use of recycled plastic content.

The recycling target and use of recycled content as per *Plastic Waste Management Rules*, 2016/EPR Guidelines are given below:

a) Minimum level of recycling (excluding end of life disposal) of plastic packaging waste (Percent of extended producer responsibility target)

Plastic packaging category	2024 to 2025	2025 to 2026	2026 to 2027	2027 to 2028 and onwards
Category III — Multilayered Plastic packing	30	40	50	60

b) Mandatory use of recycled plastic in plastic packaging (percent of imported plastic for the year)

Plastic packaging category	2025 to 2026	2026 to 2027	2027 to 2028	2028 to 2029 and onwards
Category III **—** Multilayered plastic packaging	5	5	10	10

NOTE — All the stakeholder shall refer to the latest rules/guidelines for plastic waste management, recycling target and use of recycled content as amended from time to time by the concerned regulatory authority.

(*Continued on third cover*)

Indian Standard

TEXTILES — JUTE AND POLYPROPYLENE UNION BAGS FOR PACKING 50 kg FOODGRAINS — SPECIFICATION

1 SCOPE

This standard prescribes constructional details and other requirement of jute and polypropylene union bags for packing 50 kg food grains like wheat, paddy, rice and pulses.

2 REFERENCES

The standards listed in Annex A contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards.

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 5476 and IS 10910 shall apply.

4 MANUFACTURE

4.1 The bags shall be made from a fabric with a combination of jute yarns (at least 75 percent by weight) and rest by synthetic yarns made of polypropylene. Polypropylene yarn used in the bag shall be of food grade quality (*see* IS 10910). The polypropylene yarn shall be UV stabilized with 50 percent retention in breaking strength after exposure when tested as per method given in Annex B. The jute yarn shall be smooth and uniform in the weft direction and polypropylene yarn shall be in the warp direction of the constructed bag.

4.1.1 The bags shall be made from jute yarn with linear density of 13 to 16 lb/spindle and polypropylene yarn with a linear density of 800 denier to 1 250 denier. The weave density of warp and weft shall be kept so as to meet the requirement of 75 percent of jute content in the union bags as per JPMA guidelines.

4.1.2 The fabric used in manufacture of jute/PP bags shall be woven as a tube on circular loom to ensure uniform construction with warp running along the length of the bag. The fabric construction and bag characteristic shall ensure good aeration for food grains, less oozing out of grains and good stack ability.

4.1.3 The bags shall be duly printed with ink as agreed to between the buyer and the seller. The constructional particulars of sacking used in the fabrication of the bags shall be such that the bags shall meet the requirements specified in Table 1.

4.2 Seam

In case of a tubular fabric, the bottom seam shall be stitched with two rows of chains followed by herakle stitch. The stitching shall be done with a double fold over seam to a depth of minimum 25 mm. The number of stitches per decimeter shall be 12 ± 2. The yarn used for the chain stitching shall be either jute yarn or polypropylene yarn of same quality as used in base fabric. The yarn used for herakle stitch shall be as per IS 9113. The stitching shall be uniform without any loose thread or knot.

4.3 Hemming at the Mouth

Provisions of IS 9113 shall apply.

4.4 Capacity

The bag shall have a nominal capacity of 50 kg.

4.5 Freedom from Defects

The bags shall meet the requirement of freedom from major defects as given in Annex C.

5 SPECIFIC REQUIREMENTS

5.1 The bags shall conform to the requirements specified in Table 1.

5.2 The bales containing the bags shall also conform to the requirements specified in Table 2.

5.3 The contract moisture regain of the bags shall be maximum 15 percent.

5.4 Additional Requirements for Labelling as Environment Friendly Products (Optional)

5.4.1 *General Requirement*

5.4.1.1 The bags shall confirm to the requirements for quality and performance prescribed under **5.1** to **5.3**.

5.4.1.2 The manufacturers shall produce to BIS, environmental consent clearance from the concerned State Pollution Control Board as per the provisions of *Water (Prevention and Control of Pollution) Act*, 1974 and *Air (Preventions and Control of Pollution) Act*, 1981 along with the authorization, if required under the *Environment (Products) Act*, 1986 and the Rules made thereunder, while applying for ECO-Mark. Additionally, the manufacturer shall produce documentary evidence on compliance of the provisions related to noise level and occupational health under the provisions of *Factory Act*, 1948 and Rules made thereunder.

Table 1 Requirements of Jute and Polypropylene Union Bags

(*Clauses* 4.1.3 *and* 5.1)

Sl No.	**Characteristics**	**Requirement**	**Tolerance**	**Method of Test, Ref to Cl of IS 9113**
(1)	(2)	(3)	(5)	(6)
i)	Dimensions (*see* Note 1):			**8.3.2**
	a) Outside length, cm	94	+ 4 - 0	
	b) Outside width, cm	57	+ 4 - 0	
ii)	Ends/dm	46	+ 4 - 3	**8.4.1**
iii)	Picks/dm	50	+ 2 - 2	**8.4.1**
iv)	Corrected mass/bag, g, percent	360	+ 8.0 - 6.0	**8.5.2**
v)	Average breaking strength of sacking (ravelled strip method, 10 cm × 20 cm), *Min*, N (kgf), (*see* Note 2):			**8.6.2**
	a) Warp way	1 670 (170)		
	b) Weft way	1 470 (150)		
vi)	Average seam strength (5 cm × 20 cm ravelled strip), *Min* N (kgf), warp direction	490 (50)		**8.7**
vii)	Moisture regain, percent, *Max*	15		IS 199
viii)	Oil content on oven dry de-oiled material [jute portion only (after removal of polypropylene yarn)], *Max*	3		**8.8**
ix)	Jute content, percent, *Min*	75		Annex D

NOTES

1 The bags of specified dimensions are suitable for packing of wheat, rice and similar coarse grains. For packing of other materials, the buyer and the seller may agree to the dimensions other than those specified above. The mass of such bags may be calculated by the method given in **5.2** of 1S 9113. However, tolerances specified in this table for dimension and on the mass shall be permissible.

2 The rate of extension may be changed as the bag contains polypropylene multifilament yarn in the warp direction.

Table 2 Requirements of Packed Bales

(*Clause* 5.2)

SI No.	**Characteristics**	**Requirement**	**Method of Test, Ref to CI of IS 9113**
(1)	(2)	(3)	(4)
i)	Total number of bags per bale (*see* Note 1)	500	**8.9**
ii)	Number of bags per bundle	25	-
iii)	Contract mass of a bale, kg (*see* Note 2)	180	-
iv)	Corrected net mass of a bale, kg	Not less than contract mass	**8.1**
v)	Number of joined bags per bundle of 25 bags, *Max*	1	Visual

NOTES

1 The number of bags per bale shall be 500 or as specified in an agreement between the buyer and the seller.

2 Contract mass of a bale is calculated as follows:

Contract mass of a bale = nominal mass of bag × specified number of bags per bale.

5.4.1.3 The product packaging may display in brief the criteria based on which the product has been labelled environment friendly.

5.4.1.4 The material used for product packaging shall be reusable or made from recyclable or biodegradable materials.

5.4.1.5 Fatty alcohol based non-ionics as emulsifier should be used wherever required.

5.4.1.6 Polyhalogenated based phenolic fire retardants shall not be used.

5.4.2 *Specific Requirements*

5.4.2.1 The bags shall confirm to the requirements given in Table 3.

Table 3 Specific Requirements for ECO-Mark

(*Clause* 5.4.2.1)

SI No.	**Parameter**[1)]	**Maximum Limit, Hessians and Sackings** mg/kg (ppm)
(1)	(2)	(3)
i)	Non-halogenated hydrocarbons	3 percent
ii)	Pesticides (sum parameter)[2)]	1 .0
	Banned pesticides	Nil (Below detectable limit)
iii)	*p*H of aqueous extract	6.0 to 7.0
iv)	Coupled amines from azo-dyes (sum parameters)[3)]	50.0 (Detectable limit using GC-MS)

[1)] The methods of tests for ECO-parameters are being developed by BIS and Textiles Committee. Till the methods of tests are standardized, the manufacturer shall declare conformance taking into consideration the chemicals, auxiliaries and dyes used.

[2)] The list of pesticides used on jute, banned restricted or withdrawn is appended as Annex E.

[3)] The list of coupled amines released from azo-dyes is appended as Annex F.

6 PACKING

The bags shall be packed in bales as prescribed in IS 2873 or as specified in the agreement between the buyer and the seller.

7 MARKING

7.1 The bales shall be marked as prescribed in IS 2873. Additional markings shall be made as stipulated by the buyer or required by regulation or law in force.

7.2 BIS Certification Marking

The bales and the jute and polypropylene union bag may also be marked with the Standard Mark.

7.2.1 The jute and polypropylene union bags conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the jute bags may be marked with the Standard Mark.

7.3 The bales may also be marked with ECO-Mark in addition to Standard Mark, if the requirements specified in **5.4** are also satisfied.

8 SAMPLING AND CRITERIA FOR CONFORMITY

8.1 Lot

All bales of jute and polypropylene union bags of same size produced under similar conditions of production and delivered to a buyer against one dispatch note shall constitute a lot.

8.2 Sample Size and Criteria for Conformity

For assessing the conformity of lot to the requirements of this standard, bales shall be first selected from each lot at random in accordance with the col (2) and col (3) of Table 4. All the bales so selected in the sample shall be tested for ‘Gross mass of bales’, ‘Tare mass of bailing hoops and other packing materials’ and ‘Number of bundles per bale’. Two bundles of bags selected at random from each bale selected in the sample shall be tested for total number of bags per bundle. The lot shall be considered as conforming to the requirements of this standard if all the following conditions are satisfied:

a) Total corrected net mass of all the bales in the sample is not less than the total contract mass of all the bales; and

b) Total number of bags in each bale selected as per **8.2** meet the relevant requirement.

8.3 Sample Size for Bags

For freedom from defects, length, width, ends/dm, picks/dm, number of stitch/dm, mass per bag and moisture regain, 7 bags shall be selected at random from each of the bales selected as per **8.2**. The total number of bags to be tested from each lot for these requirements is given in col (5) of Table 4.

8.4 Criteria for Conformity

8.4.1 *Criteria for Conformity for Freedom from Defects*

Each bag selected in the sample shall be tested for freedom from defects. A bag shall be termed as defective, if it contains two or more major defects (*see* Annex C). A lot shall be considered conforming to this requirement, if the number of defective bags is less than or equal to the acceptance number given in col (6) of Table 4. Acceptance numbers given in Table 4 are on the basis of an AQL of 4.0 percent.

Table 4 Sample Size and Acceptance Numbers

(*Clauses* 8.2, 8.3, 8.4.1 *and* 8.4.3)

SI No.	No. of Bales in the Lot	No. of Bales in the Sample	For length, Width, Number of Stitches/dm, Ends/dm, Picks/dm, Moisture Regain, Percentage of Jute and Polypropylene Content		
			No. of Bags from Each Bale	Total Number of Bags in Sample	Acceptance Number
(1)	(2)	(3)	(4)	(5)	(6)
i)	Up to 25	5	7	35	5
ii)	26 to 90	8	7	56	6
iii)	91 to 300	12	7	84	8
iv)	301 to 500	18	7	126	10

NOTE — If the number of bales in a consignment exceeds 500, the same shall be split into number of lots each comprising maximum of 500 bales. Joined bags shall also be drawn during sampling of bags for visual inspection and breaking strength test.

8.4.2 *Criteria for Conformity for Length and Width*

The dimension of at least 90 percent of the bags under test shall be in accordance with the requirement specified. Out of the remaining bags (10 percent, *Max*), dimension of not a single bag is below the specified nominal value by more than 2.0 cm and 1.0 cm in case of length and width, respectively.

8.4.3 *Criteria for Conformity for Ends/dm, Picks/dm, Number of Stitches/dm, Moisture Regain, and Percentage of Jute and Polypropylene Content*

The lot which meets the requirements of **8.4.1** and **8.4.2** shall be tested for ends/dm, picks/dm, number of stitches/dm, moisture regain and percentage of jute and polypropylene content as per the plan. A bag shall be termed as defective, if it fails to meet any one or more of these requirements. The lot shall be considered as conforming to the requirements of ends/dm, picks/dm, number of stitches/dm, moisture regain and percentage of jute and polypropylene content, if the total number of defective bags found in the sample is less than or equal to the corresponding acceptance number given in col (6) of Table 4.

8.4.4 *Criteria for Conformity for Mass per Bag*

The lot, which meets the above requirements, shall then be tested for mass of bag. The lot shall be declared as conforming to this requirement, if:

a) the average corrected value of mass per bag as obtained for sampled bags under test is not less than nominal value specified;
b) the corrected mass of at least 80 percent of bags under test is in accordance with requirement specified; and
c) out of remaining bags (20 percent, *Max*), all bags may have corrected mass above the specified limit, but corrected mass of not more than 10 percent of sampled bags under test is below the specified value by more than 12 percent of specified nominal value.

8.5 Sample Size and Criteria for Conformity for Breaking Strength Requirement

The lot, which meets the above requirements shall then be tested for breaking strength requirements. For this purpose, one bag shall be selected at random from each bale selected in the sample. Suitable test specimens shall be taken from these bags and tested for warp way, weft way and seam strength. The lot shall be declared as conforming to these requirements if:

a) Average values of warp way, weft way and seam breaking strengths respectively, as obtained for all test specimens are not less than the corresponding values specified; and
b) None of the individual value is less than 20 percent below the specified value.

8.6 Sample Size and Criteria for Conformity for Oil Content

The lot, which meets the above requirements, shall then be tested for oil content. For this purpose, two bags shall be selected out of two different bales selected as per **8.2**. The lot shall be declared as conforming to this requirement, if both the bags meet the requirement of oil content.

8.7 The lot shall be considered as conforming to the requirements of this standard, if **8.2** and **8.4** to **8.6** are satisfied.

9 METHOD OF SEGREGATION OF JUTE/POLYPROPYLENE YARN

9.1 Cut the bag into flat fabric with jute yarn in the weft (horizontal direction) and polypropylene yarn in warp (vertical direction). Clamp the fabric at top and start manually removing the jute yarn till the last thread is removed.

9.2 This method is very environment friendly involving no usage of water, solvents and even heating. This will result in employment generation especially of women and weaker sections of the society. After segregation, polypropylene yarn content of union bag can easily be recycled into granules or useful products. The jute yarn can be further reprocessed through carding to produce the jute fibre.

9.3 Used bag can also be crushed through shredder and can be converted into some value-added products like non-woven, composites and yarns.

10 APPLICABLE RULES FOR PLASTIC WASTE MANAGEMENT

The manufacturer shall follow *Plastic Waste Management Rules*, 2016 (amended from time to time) and the extended producer responsibility for plastic packaging notified by the ministry of environment, forest and climate change (MoEFCC), Govt of India for recycling, reuse and disposal protocol for jute and polypropylene union bags.

ANNEX A

(*Clause* 2)

LIST OF REFERRED STANDARDS

IS No.	*Title*
IS 199 : 1989	Textiles — Estimation of moisture, total size or finish, ash and fatty matter in grey and finished cotton textile materials (*third revision*)
IS 1670 : 1991	Textiles — Yarn — Determination of breaking load and elongation at break of single strand (*second revision*)
IS 1964 : 2001	Textiles — Methods for determination of mass per unit length and mass per area of fabrics (*second revision*)
IS 2873 : 1991	Textiles — Packaging of jute products in bales — Specification (*second revision*)
IS 5476 : 1986	Glossary of term relating to jute (*first revision*)
IS 9113 : 2012	Textiles — Jute sacking — General requirements (*second revision*)
IS 10910 : 1984	Specification for polypropylene and its copolymer for its safe use in contact with foodstuffs, pharmaceuticals and drinking water
IS 14887 : 2014	Textiles — High density polyethylene (HDPE)/ polypropylene (PP) woven sacks for packaging of 50 kg food grains — Specification (*first revision*)

ANNEX B

(*Clause* 4.1)

U.V RESISTANCE TEST

B-1 To determine the effect of U.V radiation and weathering on the breaking strength, the polypropylene yarn shall be exposed as given in **B-2** and **B-3**.

B-2 TEST CONDITION

The test shall be carried out with fluorescent UV-lamp Type B (313 nm or its equivalent).

The duration of the test shall be 192 h (that is, 8 days) in continuous mode.

The test cycle shall be 8 h at 60 °C ± 3 °C with UV radiation alternating with 4 h at 50 °C ± 3 °C with condensation. Irradiance level throughout the test cell shall be maintained at 0.63 (+ 0.04/- 0) W/m^2.

B-3 TEST PROCEDURE

B-3.1 Determine the original average breaking strength of the polypropylene yarn as per the test method specified in IS 1670 at a gauge length of 200 mm ± 2 mm with a speed of 300 mm/min ± 15 mm/min on constant rate of traverse machine (CRT). The average of 5 specimens shall be reported.

B-3.2 Expose the specimens alternately to ultraviolet light and condensation in respective test cycle in continuous mode for total 192 h. The type of fluorescent UV lamp, the timing of the UV and condensation exposure and condensation shall be as specified in **B-2**. The average of 5 specimens shall be reported.

B-3.3 Determine the average breaking strength of the yarn separately after UV exposure as mentioned above at **B-3.1**.

B-3.4 Determine the percent retention of original strength as follows:

Percentage retention of the original breaking strength is = b/a × 100

where

a = average breaking strength before UV exposure as obtained in **B-3.1**; and

b = average breaking strength after UV exposure as obtained in **B-3.3**.

NOTES

1 The UV source is an array of fluorescent lamps (with lamp emission concentrated in the UV range).

2 Condensation is produced by exposing the test surface to a heated, saturated mixture of air and water vapour, while the reverse side of the test specimen is exposed to the cooling influence of ambient room air.

ANNEX C

(*Clauses* 4.5 *and* 8.4.1)

CLASSIFICATION OF DEFECTS

<table>
<tr><th>*Sl No.*</th><th>*Type of Defect*</th><th colspan="2">*Description*</th><th>*Major*</th><th>*Minor*</th></tr>
<tr><td>(1)</td><td>(2)</td><td colspan="2">(3)</td><td>(4)</td><td>(5)</td></tr>
<tr><td rowspan="2">i)</td><td rowspan="2">GAW</td><td colspan="2">> 1.5 cm</td><td>x</td><td></td></tr>
<tr><td colspan="2">0.5 cm to 1.5 cm</td><td></td><td>X</td></tr>
<tr><td>ii)</td><td>Multiple broken/missing warp (end)</td><td colspan="2">Two or more contiguous, regardless of length</td><td>x</td><td></td></tr>
<tr><td rowspan="2">iii)</td><td rowspan="2">Multiple broken weft (pick)</td><td colspan="2">Two or more contiguous, regardless of length</td><td>x</td><td></td></tr>
<tr><td colspan="2">One pick, full width</td><td></td><td>X</td></tr>
<tr><td>iv)</td><td>Cut, hole, tear or patch</td><td colspan="2">Two or more warp or filling threads ruptured at adjoining points</td><td>x</td><td></td></tr>
<tr><td rowspan="2">v)</td><td rowspan="2">Float</td><td rowspan="2">A place in the fabric where warp and weft yarns escape the required interlacement</td><td>$> 2\ cm^2$</td><td>x</td><td></td></tr>
<tr><td>$0.5\ cm^2$ to $2\ cm^2$</td><td></td><td>X</td></tr>
<tr><td rowspan="2">vi)</td><td rowspan="2">Gap stitching</td><td rowspan="2">Stitches missing</td><td>> 1.5 cm</td><td>x</td><td></td></tr>
<tr><td>0.5 cm to 1.5 cm</td><td></td><td>X</td></tr>
<tr><td rowspan="2">vii)</td><td rowspan="2">Corner gap</td><td rowspan="2">Corner of the bag not properly stitched resulting in formation of hole</td><td>> 1.5 cm</td><td>x</td><td></td></tr>
<tr><td>0.5 cm to 1.5 cm</td><td></td><td>X</td></tr>
<tr><td>viii)</td><td>Mildew</td><td colspan="2">Staining of fabric due to fungal or bacterial growth visible to naked eye</td><td>x</td><td></td></tr>
<tr><td colspan="6">NOTES
1 x — Major defects.
X — Minor defects.
2 Two minor defects shall be counted as one major defect.</td></tr>
</table>

ANNEX D

[*Sl No*. (*ix*) *and Table* 1]

DETERMINATION OF MASS PERCENTAGE OF JUTE AND POLYPROPYLENE YARN CONTENT

D-1 Determine the total gram per square meter of the complete bag/fabric in accordance with IS 1964/ IS 14887.

D-2 Lay the sample on a flat table, mark 10 cm square area in flat fabric with the help of the scale.

D-2.1 Cut the sample from fabric as marked above with the help of a sharp scissors or razor blade.

D-2.2 Weigh the sample to an accuracy of 0.001 g without removing the yarn from the sample, the draught being stopped during weighing.

D-2.3 Remove the polypropylene and jute yarn separately from both the directions (warp and weft) of the sample.

D-2.4 Weigh the polypropylene and jute yarn separately to an accuracy of 0.001 g.

D-3 CALCULATIONS

Calculate the mass percentage of the polypropylene and jute yarn by the following formula: -

a) Mass percentage of polypropylene yarn

$$= \frac{\text{Mass of polypropylene yarn x 100}}{\text{Mass of sample}}$$

b) Mass percentage of jute yarn

$$= \frac{\text{Mass of jute yarn x 100}}{\text{Mass of sample}}$$

ANNEX E

(*Table* 3)

LIST OF PESTICIDES USED ON JUTE - BANNED, RESTRICTED OR WITHDRAWN

E-1 PESTICIDES REGISTERED FOR USE ON JUTE IN INDIA

HERBICIDES : Dalapon

FUNGICIDES : Carbendazim

INSECTICIDES : Carbaryl, Carbofuran,
Endosulfan, Lindane,
Phosalone, Quinalphos

E-2 EXTRACT FROM LIST OF PESTICIDES NOT APPROVED, RESTRICTED USE, WITHDRAWN OR BANNED IN THE COUNTRY AS ON 10.04.1992

E-2.1 Pesticides not Approved for Use

2,4, 5-T

E-2.2 Pesticides Restricted for Use

Use of DDT in agriculture is banned. In very special circumstances warranting the use of DDT for plant protection, the state or central government may purchase it directly from M/s Hindustan Insecticides Ltd, to be used under expert government supervision. Use of DDT for public health programme up to 10 000 MT per annum, except in case of any major outbreak, is restricted.

Use of diedrin shall be restricted for locust control in desert areas by plant protection advisor to the Government of India.

E-2.3 Pesticides Banned/Withdrawn

Pentachlorophenol, toxaphene and aldrin.

ANNEX F

(*Table* 3)

LIST OF COUPLED AMINES RELEASED FROM AZO - DYES

a) 4-Aminodiphenyl;
b) 2-Amino-4 –nitrotouene;
c) 1,3 Benzidine;
d) 4-Chloro-*o*-toluidine;
e) 2-Naphy Iamine;
f) *o*-Alminoazotolune;
g) *p*-Chloraniline;
h) 2,4-Diaminoanisole;
j) 4,4’ – Diaminodiphenylmethane;
k) 3,3’ – Dimethoxybenzidine;
m) 3,3’ – Dimethoxybenzidine;
n) 3,3’ – Dimethylbenzidine;
p) 3,3’ – Dimethyl-4,4’ diaminodiphenylmethane;
q) *p*-kresidin (2-Methoxy 5-methylaniline);
r) 4,4’ Methylene-bis-(2 -chloraniline);
s) 4,4’ Oxydianiline;
t) 4,4’ Thiodianiline;
u) *o*-Toluidine;
v) 2,4, – Toluylenediamine;
w) 2,4,5 – Trimethylaniline;
y) *p*-Amino-azobezene; and
z) 2-Methoxyaniline.

ANNEX G

(*Foreword*)

COMMITTEE COMPOSITION

Jute & Jute Products Sectional Committee, TXD 03

Organization	*Representative(s)*
Jute Commissioner, Kolkata	Shri Moloy Chandan Chakraborthy, IDAS **(*Chairperson*)**
Caledonian Jute & Industries Limited, Kolkata	Shri Pankaj Kumar Chatterjee
Cheviot Company Limited, Kolkata	Ms Satarupa Banerjee Ms Pratima Chowdhury (*Alternate*)
CSIR - Indian Institute of Toxicology Research, Lucknow	Dr V. P. Sharma
Department of Jute & Fibre Technology, Institute of Jute Technology University of Kolkata	Prof A. Choudhury Prof S. K. Ghosh (*Alternate*)
EID Parry (India) Ltd, Chennai	Shri T. Kannan
Eskaps (India) Private Limited, Kolkata	Shri satyajit Chakraborty Shri Laba Kumar Das (*Alternate*)
Food Corporation of India, New Delhi	Dr Rajesh Gulia Shrimati Vemula Sridevi (*Alternate*)
Food, Civil Supplies & Consumer Protection Department, Govt of Chhattisgarh	Shri Santosh Kumar Pathak
Food, Civil Supplies & Consumer Protection Department, Govt of Punjab	Shri Ghanshyam Thori Dr Anjuman Bhasker (*Alternate*)
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Ministry of Textiles, New Delhi	DIRECTOR (JUTE)
Murlidhar Ratanlal Exports, Kolkata	SHRI AVIJIT DAS
National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED), Kolkata	SHRIMATI ANINDITA GUHA
National Jute Board, Kolkata	SHRI MAHADEB DUTTA
National Jute Manufacturers Corporation Limited Kolkata	SHRI I. A. MONDAL
Office of the Jute Commissioner, Kolkata	SHRI SOUMYADIPTA DATTA
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The Jute Corporation of India Limited, Kolkata	SHRI KALYAN MAJUMDAR SHRI A. MAJUMDAR (*Alternate*)
West Bengal Pollution Control Board, Kolkata	SHRI SUBRATA GHOSH SHRI QAZI HASAN (*Alternate*)
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Member Secretary
SHRI DHARMBEER
SCIENTIST ‘D’/JOINT DIRECTOR
(TEXTILES), BIS

(*Continued from second cover*)

The types of bags specified in this standard have been developed after extensive trials keeping in view the guidelines provided by the international labour organization (ILO) for not permitting manual carriage of weight exceeding 50 kg by the workers and consumers for their safety.

The composition of the Committee responsible for the formulation of this standard is given in Annex G.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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